The Influence of Self-Efficacy and Learning Motivation on Students' Autonomous Learning in the Digital Era

Armiati[a], Rose Rahmidani[b] and Dessi Susanti[c]
Department of Economic Education, Universitas Negeri Padang, Prof. Hamka Street, Air Tawar, Padang, Indonesia

Keywords: Self-Efficacy, Learning Motivation, Autonomous Learning.

Abstract: The purpose of the study is to ascertain and analyze 1) The Influence of Self-Efficacy on learning motivation; 2) The Influence of Self-Efficacy on students' autonomous learning through Learning Motivation. This type of research is quantitative with an associative type. The sampling technique used in this study was proportional random sampling with a random number of members from each sub-population with a sample of 217 students. The data used are primary. The data collection technique is in the form of a questionnaire. Data analysis used descriptive analysis, analysis prerequisite test, path analysis, t-test, and coefficient of determination. The analysis tool uses SPSS with an alpha of 0.05. The results showed that 1) Self-Efficacy has a significant influence on Learning Motivation and 2) Through learning motivation as an intervening variable, self-efficacy has no impact on students' autonomous learning.

1 INTRODUCTION

The development of the affective aspect is crucial for enhancing student character. The character can be interpreted as a vessel of different psychological traits that help a person adapt to numerous environmental situations they may face. In addition, A character is essential to developing and producing a wonderful human resource, and an independent character is one of them, especially in facing various challenges in the digital era (Walker and Graham 2021).

Successful learning can be gained by being more independence. Independent includes initiating behavior, overcoming obstacles or problems, having self-confidence, and being able to do things by themselves. Independent persons have a desire to do things by themselves and are capable to find the solution to their problems. The independence of students in the digital era should be well developed because of the ease of access obtained in finding learning resources and learning new things through technology (Johnsen and Goree 2021)

In fact, improvement in how Vocational high school prepares students to be independent character is required. In teaching and learning activities, the students of Vocational High School 6 Padang have obtained the theory and practice material that can be applied during the learning so that students are expected to be independent.

The initial observations results revealed that the level of student autonomous learning in the Eleventh grade at Vocational High School 6 Padang was not sufficient, out of 30 students only 46.6% of them actively asked questions in learning. 43.3% lack initiative to increase knowledge by additional books from library. The teacher also notes that only a few students are eager to ask questions throughout the learning; instead, they are more likely to accept the information offered by the teacher, whether or not they fully comprehend it. According to mass media, some students are absent, less motivated, and lack of goals for their future (Esra and Sevilen 2021). The adolescent problems above indicate a lack of awareness of responsibility and independence in learning. This phenomenon can cause problems when they attend higher education (Crome, Farrar, and O'Connor 2009).

A factor that influences students' autonomous learning is self-efficacy. furthermore, other factors that influence students' autonomous learning include

[a] https://orcid.org/0000-0001-8457-4834
[b] https://orcid.org/0000-0003-2953-6979
[c] https://orcid.org/0000-0002-3376-8775

Armiati, ., Rahmidani, R. and Susanti, D.
The Influence of Self-Efficacy and Learning Motivation on Students' Autonomous Learning in the Digital Era.
DOI: 10.5220/0012198500003738

In *Proceedings of the 4th International Conference on Innovation in Education (ICoIE 4 2022) - Digital Era Education After the Pandemic*, pages 200-205
ISBN: 978-989-758-669-9; ISSN: 2975-9676

self-efficacy, motivation, and goals (Cobb Jr 2003). The ability or competency of a person to carry out a task, accomplish a goal, or get through challenges while learning is known as self-efficacy. Self-efficacy is the belief in their ability to train their self-control over the phenomenon in their environment (Bandura, in (Feist and Feist 2010); (Bandura 2013); (Bandura 2012). Self-efficacy is reflected in the students themselves through a learning process that occurs through interaction with the environment.

Based on Schunk's opinion, self-efficacy can perform during academic learning. Before engaging in learning activities, Students have different beliefs about how to gain information, demonstrate skills, master a subject, and many other things (Schunk 1991). Personal factors together with situational factors (teacher rewards and feedback), such as goal setting and information processing can influence student learning.

Aside from self-efficacy, another factor that influences students' autonomous learning is learning motivation. Students' motivation is positively related to students' autonomous learning (Cobb Jr 2003). Students must be motivated to implement strategies that will impact the learning process.

Motivation is something that drives a person or group of people toward doing or not doing something as an active momentum (Dörnyei, Muir, and Ibrahim 2014). Motives become active at certain times, especially when the need to achieve a goal is urgent or felt.

Students' autonomous learning is closely related to learning motivation (Schunk and Mullen 2012). Strong motivation to achieve the goal is necessary for building intelligence. If a strong motivation has emerged, it will create an attitude of independence in the student. Students' self-efficacy affects their motivation to learn. A person with high self-efficacy will be more motivated to learn. This is reflected in someone's efforts and persistence in overcoming obstacles. People with high self-efficacy will work harder to get beyond the obstacles.

Motivation can be an intervening variable to determine the influence of self-efficacy on students' autonomous learning. In line with the results of previous research that has tested the influence of self-efficacy on students' autonomous learning with motivation as the intervening variable. (Anderson, Hattie, and Hamilton 2005), (Cherian and Jacob 2013) found that students' autonomous learning and self-efficacy are positively correlated. Subsequent research by (Kurniyawati 2012) found that self-efficacy and motivation have a positive and significant relationship. Good self-efficacy will help students to achieve good motivation so that students can complete assignments optimally. The purpose of this study was to analyze the influence of self-efficacy on learning motivation and the influence of self-efficacy on students' autonomous learning through learning motivation. (Karnedi, Zaim 2021) found that students lacked motivation in studying. Both internal and external factors contributed to this cause.

2 RESEARCH METHOD

Ex post facto research design is used in this quantitative research type. The population was 473 students of Eleventh grade at Vocational High School 6 Padang with 217 samples through proportional random sampling technique. The exogenous variable in this study is self-efficacy, the endogenous variable is students' autonomous learning and the intervening variable is learning motivation.

A questionnaire is used to collect the data. Before collecting the data, instrument validation were done to obtain valid and reliable instruments. The results of the variable testing on students' autonomous learning are 18 valid statements with very high reliability from Cronbach's Alpha value of 0.901. In the Self-Efficacy variable, there are 14 valid statements with very high reliability, with a Cronbach Alpha value of 0.880. Furthermore, on the learning motivation variable, there are 23 valid statements with very high reliability from the Cronbach Alpha value of 0.887.

Before analyzing the data, analysis prerequisite tests were obtained, such as the normality test and heteroscedasticity test. To see the influence between variables by using path analysis (Path Analysis) with the SPSS application. The path model in this study can be described as follows:

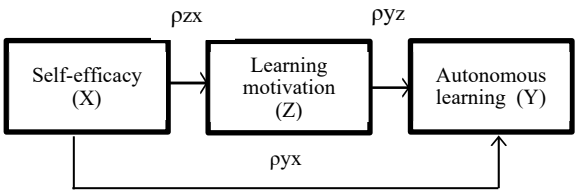

Figure 1: Research path model.

Furthermore, the t-test is used to see whether the proposed hypothesis is proven or not, with the criterion that if the significant value is <0.05 then Ho is rejected and Ha is accepted.

3 RESULT AND DISCUSSION

3.1 Result

Respondents in this study were 217 students of Eleventh grade at Vocational High School 6 Padang The number of female respondents was 191 students, more dominant than male students, only 26 students. Based on the respondent's answers, the results of the frequency distribution of the research variables are shown in the following table:

Table 1: Distribution of Independent Learning scores.

Indicator	Mean	TCR (%)	Description
Learning activity	4,08	81,65	Good
Persistence of learning activities	3,54	71,09	Quite good
Learning direction	3,64	72,88	Quite good
Learning creativity	3,83	76,69	Quite good
Average	**3,77**	**75,57**	**Quite good**

Table 2: Distribution of Learning Motivation scores.

Indicator	Mean	TCR(%)	Description
Desire to succeed	3,98	79,81	Good
Motivation and needs for learning	4,36	87,39	Good
Future goal and purpose	4,28	85,78	Good
Learning rewards	4,16	83,46	Good
Interesting activities	4,06	80,24	Good
Conducive learning environment	3,89	77,92	Quite good
Average	**4,12**	**82,43**	**Good**

Table 3: Distribution of Self-Efficacy Scores.

Indikator	Mean	TCR(%)	Keterangan
Level	4,00	80.11	Good
Strenght	4,03	80,80	Good
Generality	4,04	80,91	Good
Rata-rata	**4,02**	**80,60**	**Good**

Table 4: Normality Test.

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		217
Normal Parameters[a,b]	Mean	,0000000
	Std. Deviation	5,54425041
Most Extreme Differences	Absolute	,041
	Positive	,041
	Negative	-,041
Kolmogorov-Smirnov Z		,604
Asymp. Sig. (2-tailed)		,858
a. Test distribution is Normal.		
b. Calculated from data.		

Table 5: Heteroscedasticity Test.

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	1,913	2,383		,803	,423
	Self Efficacy (X)	-,045	,055	-,077	-,807	,420
	Motivation (Z)	,052	,032	,155	1,618	,107
a. Dependent Variable: Abs_Res						

Table 6: Coefficient of Self-Efficacy on Learning Motivation.

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	26,494	4,701		5,636	,000
	ED	1,210	,083	,706	14,612	,000
a. Dependent Variable: KM						

The coefficient of self-efficacy (X) on learning motivation (Z) is 0.706, the t count is 14.612 and the significance is 0.000 <0.05. This demonstrates how learning motivation (Z) was impacted by self-efficacy (X).

Table 7: Coefficient of Determination, Sub Structure 1.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,706[a]	,498	,496	7,24451
a. Predictors: (Constant), ED				

Self-efficacy variable (X) has a 0.498 coefficient of influence on learning motivation (Z). This means that the self-efficacy variable contributes to learning motivation by 49.8%. While the remaining 50.2% is influenced by other variables. Mathematically, the empirical model of the influence of self-efficacy (X) on learning motivation (Z) is stated as follows: $Y = Pzx + \varepsilon_1$, $Y = 0.706x + 0.502\varepsilon_1$.

Table 8: Coefficient of Self-Efficacy and Learning Motivation on Students' Autonomous Learning.

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	9,315	3,872		2,406	,017
	Efikasi Diri	,474	,090	,354	5,278	,000
	Motivasi Belajar	,330	,052	,423	6,302	,000
a. Dependent Variable: kemandirian belajar						

The coefficient of self-efficacy (X) on students' autonomous learning is shown by the value of Standardized Coefficients beta is 0.354. The t count is 5.278 and the significance is 0.000 <0.05. This means that there is an influence of self-efficacy (X) on students' autonomous learning (Y).

The coefficient of learning motivation (Z) on students' autonomous learning (Y) is indicated by the value of Standardized Coefficients beta is 0.423. The t count is 6.302 and the significance is 0.000 <0.05. This shows that there is an influence of learning motivation on students' autonomous learning.

Table 9: Coefficient of Determination, Sub Structure 2.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,718[a]	,516	,512	5,57010
a. Predictors: (Constant), motivasi belajar, efikasi diri				
b. Dependent Variable : Kemandirian Belajar				

The influence of self-efficacy variables (X) and learning motivation (Z) is 0.516. This means that the variables of self-efficacy and learning motivation contribute to students' autonomous learning by 51.6%. While the remaining 48.8% is affected by other variables. Mathematically, the empirical model of the influence of self-efficacy (X) and learning motivation (Z) on students' autonomous learning (Y) is stated as follows: Y = Pyx + Pyz + ε2, Y = 0.354x + 0.423z + 0.484ε2

From the results of the data analysis above, the following path structure is created by considering the impact of exogenous and endogenous variables on the dependent variable:

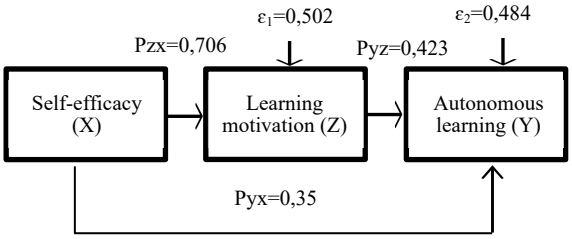

Figure 2: Complete path model of test results.

Table 10: Direct and Indirect Influence of the Path Coefficient of each variable.

No	Variable influence	Influence		Total
		Direct	Indirect	
1	X toward Y	0,354	0,032	0,386
2	X toward Z	0,706	-	0,706
3	Z toward Y	0,423	-	0,423

Based on the table above, therefore it can be said that the contribution of self-efficacy (X) to autonomous learning (Y) is 0.354 or 35.4%, meanwhile, the indirect contribution of self-efficacy and learning motivation to autonomous learning is 0.032 or 3.2 %. The direct contribution of learning motivation (Z) to students' autonomous learning (Y) is 0.423 or 42.3%. So it showed that the contribution of the direct influence is bigger than the indirect influence. This means that learning motivation as an intervening variable does not play a role in increasing student students' autonomous learning to increase students' autonomous learning is enough by increasing self-efficacy in students.

3.2 Discussion

3.2.1 The Influence of Self-Efficacy on Student Learning Motivation

According to the analysis of the first hypothesis test's findings, self-efficacy has an impact on student's motivation to learn. The student is more motivated to learn when they have a better sense of self-efficacy.

Self-efficacy is an individual believes that he feels capable of overcoming many things including the actions needed to achieve goals. Meanwhile, motivation is an encouragement that comes from inside and outside a person who is trying to find the desire to succeed in forming experiences and exercises that influence his behavior. Students who have strong self-efficacy and believe in their abilities, these students will be motivated to achieve their goals in learning, such as a sense of willingness to get appreciation from the teacher and to achieve goals in the future (Schunk & Miller, 2002).

Self-efficacy is a factor in learning motivation; a person with a high level of self-efficacy will be more motivated. (Pervin & Jhon, in Bandura, 2013). The more self-efficacy a person has, the more motivated they are to study. This is reflected in the effort and persistence in overcoming existing obstacles. When he faced difficulties, he will continue to perform his duties and not give up easily. People with high self-efficacy will use more effort to get beyond challenges.

High self-efficacy makes students more confident in having efforts to achieve good learning outcomes, Students can easily handle situations and manage demands that arise from both within themselves and the environment because they have control over their emotions and their ability to act (Zimmerman, B.J, 2000). Strong self-efficacy can increase learning motivation in achieving learning achievement at

school, and students' strong belief can solve problems or difficulties that will be faced. To enable the students to confidently resolve the problem they encounter at school (Pervin & Jhon in Bandura, 2013).

The findings of this study are consistent with the research conducted by Kurniawati (2012) and Budi, Santosa, and Suhendro (2018) who found that Self-efficacy and learning motivation are positively and significantly correlated. This demonstrates that having high levels of self-efficacy will also assist students to develop good learning motivation and enable them to finish assignments successfully.

3.2.2 The Influence of Self-Efficacy on Students' Autonomous Learning Through Learning Motivation as an Intervening Variable

Based on the results of the analysis test in the second hypothesis, it revealed that the value of Z count <Z table, which means that the parameter is not significant. The direct influence of self-efficacy on autonomous learning is bigger than the indirect influence of self-efficacy on autonomous learning through motivation.

Students with high levels of self-efficacy will be highly motivated to learn in their learning. Students will believe in themselves to do difficult tasks and try to deal with obstacles. In other words, students who have low self-efficacy typically lack confidence in their abilities. The ability of a student's self-efficacy plays a very important role in increasing learning motivation because belief in one's abilities will motivate students to be actively involved in ongoing learning.

Based on Kurniawati's research (2012) shows that Self-efficacy and learning motivation are positively and significantly correlated. However, The findings of this study show that learning motivation in Eleventh-grade students at Vocational High School 6 Padang is unable of being mediation to strengthen students' autonomous learning. Learning motivation plays no role in increasing students' autonomous learning to increase students' autonomous learning it is sufficient for students by increasing their self-efficacy.

According to Cobb (2003), the factors that influence students' autonomous learning include self-efficacy, motivation, and goals. Bandura in Jess Feist & Gregory J. Feist (2012) argues that when someone has high self-efficacy, they will have a strong capacity to control their actions. Accordingly, the degree of self-regulation in terms of independence increases as self-efficacy increases. Students' self-efficacy has an important role in increasing autonomous learning because the foundation of self-efficacy is having belief in someone's ability to engage actively and autonomously in learning activities.

The results of this study are supported by the results of research conducted previously by Devi (2016) it shows that self-efficacy is the belief that one can act in a way that will result in the desired behavior in a certain circumstance. Consequently, having strong self-efficacy will improve a person's performance in general. Furthermore, research by Adicondro and Purnamasari (2011), February (2016), and Sari et al., (2017) shows that there is a positive relationship between self-efficacy and students' autonomous learning. Self-efficacy is a measurement of a student's confidence in his or her ability to carry out a task, accomplish a goal, or get beyond a learning obstacle.

4 CONCLUSIONS

Based on the results study, it represents that: (1) Self-efficacy has a direct influence on student students' autonomous learning. This implies that students' self-efficacy will rise along with their level of autonomous learning. (2) Self-efficacy has no influence on student students' autonomous learning through learning motivation as an intervening variable. As a result, motivation cannot be considered an intervening variable between students' self-efficacy and independent learning. To promote students' autonomous learning, self-efficacy must be increased.

Considering the result of this study, the suggestions provided are: (1) Students can increase their self-efficacy by believing that they can complete a task and achieve positive learning results. Along with enjoying the challenge of difficult tasks and working in groups rather than doing it alone to exchange opinions. (2) Students have a desire to learn on their own so that they can become more autonomous and responsible. Additionally, students look for sources of information about a subject more frequently to expand their knowledge rather than just studying for tests, and (3) To develop an active desire to learn and become skilled students, they can increase their learning motivation. It is believed that this would prevent students from easily giving up when they encounter learning difficulties.

REFERENCES

Anderson, Angelika, John Hattie, and Richard J. Hamilton. 2005. "Locus of Control, Self-Efficacy, and Motivation in Different Schools: Is Moderation the Key to Success?" *Educational Psychology* 25(5):517–35.

Bandura, Albert. 2012. "On the Functional Properties of Perceived Self-Efficacy Revisited." *Journal of Management* 38(1):9–44.

Bandura, Albert. 2013. "The Role of Self-Efficacy in Goal-Based Motivation."

Cherian, Jacob, and Jolly Jacob. 2013. "Impact of Self Efficacy on Motivation and Performance of Employees."

Cobb Jr, Robert. 2003. "The Relationship between Self-Regulated Learning Behaviors and Academic Performance in Web-Based Courses."

Crome, Keith, Ruth Farrar, and Patrick O'Connor. 2009. "What Is Autonomous Learning?" *Discourse: Learning and Teaching in Philosophical and Religious Studies* 9(1):111–25.

Dörnyei, Zoltán, Christine Muir, and Zana Ibrahim. 2014. "Directed Motivational Currents." *Motivation and Foreign Language Learning: From Theory to Practice* 9–30.

Esra, MEŞE, and Çiğdem Sevilen. 2021. "Factors Influencing EFL Students' Motivation in Online Learning: A Qualitative Case Study." *Journal of Educational Technology and Online Learning* 4(1):11–22.

Feist, Jess, and Gregory J. Feist. 2010. "Teori Kepribadian." *Jakarta: Salemba Humanika* 31.

Johnsen, Susan K., and Krystal K. Goree. 2021. "Teaching Gifted Students through Independent Study." Pp. 445–78 in *Methods and materials for teaching the gifted*. Routledge.

Karnedi, Zaim, Mukhaiyar. 2021. "Seven C's Communication Skills Problems in Writing Business Letter of English Major Undergraduate Students."

Kurniyawati, Rita. 2012. "Hubungan Antara Efikasi Diri Dengan Motivasi Belajar Siswa."

Schunk, Dale H. 1991. "Self-Efficacy and Academic Motivation." *Educational Psychologist* 26(3–4):207–31.

Schunk, Dale H., and Carol A. Mullen. 2012. "Self-Efficacy as an Engaged Learner." *Handbook of Research on Student Engagement* 219–35.

Walker, Sue, and Linda Graham. 2021. "At Risk Students and Teacher-Student Relationships: Student Characteristics, Attitudes to School and Classroom Climate." *International Journal of Inclusive Education* 25(8):896–913.